

## BIRD LIFE ON MT. MITCHELL

BY THOMAS D. BURLEIGH

THERE are probably few mountain peaks in North America that are better known than Mt. Mitchell. Rising 6,684 feet above sea level, it is the highest point in the eastern half of the United States, and as such is known at least by name to all familiar with the geography of this country. Situated in western North Carolina, where high altitudes are a characteristic feature of the topography, its supremacy is closely challenged by other mountain-tops, notably Clingman's Dome in the Great Smokies with an altitude of 6,642 feet, and this fact unfortunately robs Mt. Mitchell of much of its impressiveness. Actually the first glimpse of this mountain is rather disappointing, and it is only after the top has been reached that appreciation of its unique attractiveness is realized.

Many changes have taken place on this mountain-top since Professor Elisha Mitchell first explored its upper slopes seventy years ago. Then it was covered with a dense forest of red spruce (*Picea rubra*), accessible only on foot by means of dim narrow trails. So tall and close together did these trees grow that it is said that the sunlight rarely reached the ground, and then only in openings caused by the uprooting of some over-mature tree. The predominating underbrush was endless tangled stretches of rhododendron (*Rhododendron catawbiense*), interspersed with such northern hardwoods as the yellow birch (*Betula lutea*), mountain ash (*Sorbus americana*), and beech (*Fagus grandifolia*). Above 6,000 feet the trees became perceptibly smaller, and the southern balsam (*Abies fraseri*) replaced much of the spruce, while below an elevation of approximately 4,500 feet hardwoods took the place of this coniferous growth.

Today a totally different picture meets the eye. Through logging, and then repeated fires, the thick spruce forest has been so completely destroyed that only at the very summit of the mountain does a narrow fringe remain. Elsewhere the scene is one of utter desolation. Rotting stumps and fire-scarred snags bear witness to man's destructiveness, and so thickly has such deciduous underbrush as the fire-cherry (*Prunus pennsylvanica*) and Canadian elderberry (*Sambucus racemosa*) grown that spruce reproduction is almost negligible. Attempts have been made since 1916 to replant this area with spruce seedlings but the growth of this species is so slow that to date this planting has changed but little the appearance of these mountain-sides.

As might be expected the destruction of the original forest has changed materially the bird life of this mountain-top. Certain species once plentiful, such as the Black-capped Chickadee, have completely disappeared, while others heretofore unrecorded here, as the Song Sparrow, are plentiful now during the summer months in the cut-over area. Sufficient spruce and fir woods remain at the top of the mountain to assure protection and food to such species as the Golden-crowned Kinglet and Brown Creeper, but their numbers are relatively few in comparison to twenty years ago. In direct contrast is the present abundance of the Chestnut-sided Warbler in the denuded area where originally it was unknown.

It is during the winter months that birds are scarcest on Mt. Mitchell, but this is hardly to be wondered at. Because of the high altitude it is not uncommon to have the ground covered with a gradually increasing depth of snow that persists from late November until well into April. Temperatures as low as twenty-two degrees below zero Fahrenheit have been recorded, and for the larger part of each winter the ground remains frozen for a depth of several inches. High winds of varying velocity blow almost daily, and when the temperature has dropped to zero or lower, existence for even the most hardy bird must become somewhat precarious. Food is an important factor in the distribution of bird life during the winter months, and in this case the crop of spruce and fir cones that has ripened in the late fall determines to a large extent the number of birds to be found here at this time of the year. Golden-crowned Kinglets and Carolina Juncos are invariably present each winter, but are far more plentiful if the cone crop is abundant. Red-breasted Nuthatches disappear completely in late fall if, as happens at times, no seed is produced that year, and it is early April before any are seen again. Pine Siskins are equally affected by this lack of seed, and to a certain extent this may also be said to apply to such species as the Hairy Woodpecker and Winter Wren. Despite the severity of the weather it is always possible to find at least a few birds in this fir and spruce woods, even in mid-winter, and under favorable conditions a January day may find nine or ten species represented as the characteristic winter bird life of this mountain-top.

By the latter part of February the first early migrants appear. Song Sparrows venture to the very edge of the fir and spruce woods. Bluebirds can be seen in small flocks in the cut-over area, and there is a perceptible increase in the numbers of such species as the Carolina Junco that have remained throughout the winter. Through March and early April birds that will remain through the summer months

make their appearance, and by the latter part of April the spring migration is practically over. A fact of interest at this time is the very noticeable absence of transients. Records for species other than breeding birds are extremely scarce, and while difficult to explain there is little question but that the higher altitudes are consistently shunned by transients at this time of the year.

It is during the summer months that bird life is at its maximum abundance on Mt. Mitchell. This is due not only to the broods of young that have been successfully reared, but also to the presence of species that have nested in the valleys and then wandered up the mountain-sides in small family parties. Pine Warblers and Black and White Warblers appear with unfailing regularity in late July, Redstarts in August, and these linger until the middle of September. Other species, as the Carolina Wren and the Wood Pewee, are less regular in their appearance, but can be found here at frequent intervals during the summer months. It is possible that this is an attempt to escape the heat of the lower altitudes, but as this habit is apparently confined to a certain few species it is more probable that it is an example of summer wandering prevalent among many birds.

In contrast to the spring months the fall migration is as pronounced at the higher altitudes as in the valleys. From late August until early November transients appear in varying numbers from day to day, and many species not seen at any other time of the year are recorded then. It is surprising, however, how many common birds avoid the higher ridges and apparently never leave the valleys. Relatively few appear in the fir and spruce woods with any degree of regularity, and then only in limited numbers.

The following list of birds observed by the writer on Mt. Mitchell covers an interval of approximately five years, from January 1930, through September 1934. For the first two years, one day each week was spent at the top of the mountain, and while less-frequent visits were made during later years a month rarely passed without at least one trip there. During this time detailed notes were kept of the birds seen, and it is felt that a reasonably thorough knowledge was acquired of the bird life of these higher altitudes. Comment on birds seen near the foot of the mountain is largely omitted at this time. An arbitrary limit of 5,000 feet has been set, and only birds recorded from this point to the top of the mountain are included in this paper. Of the eighty-seven species listed one, Bendire's Crossbill, is here recorded for the first time east of the Mississippi River.

TURKEY VULTURE, *Cathartes aura septentrionalis*.—Seen at infrequent intervals during the spring and summer months, soaring overhead over the top of the mountain. Extreme dates for its occurrence are March 30 (1933), and September 3 (1930).

SHARP-SHINNED HAWK, *Accipiter velox velox*.—Found during the summer and early fall in the thick fir and spruce woods fringing the top of the mountain, where one or two birds can be seen during the course of the day. It is not known to breed. Extreme dates are July 31 (1934), and October 1 (1931).

EASTERN RED-TAILED HAWK, *Buteo borealis borealis*.—Resident in the valleys, and of infrequent and irregular occurrence in the cut-over area throughout the year.

BROAD-WINGED HAWK, *Buteo platypterus platypterus*.—One record, a single bird seen soaring overhead, August 27, 1930.

MARSH HAWK, *Circus hudsonius*.—One record, a single bird seen beating low over the cut-over area (6,000 feet), October 27, 1930.

EASTERN SPARROW HAWK, *Falco sparverius sparverius*.—Of irregular occurrence throughout the year in the cut-over area.

EASTERN RUFFED GROUSE, *Bonasa umbellus umbellus*.—Fairly plentiful in the fir and spruce woods at the top of the mountain where a brood of newly hatched young was seen June 4, 1930. Observed at infrequent intervals in the cut-over area.

EASTERN BOB-WHITE, *Colinus virginianus virginianus*.—One record, a male seen July 5, 1934, feeding at the side of the road through the cut-over area (5,200 feet). It is possible that in time this species may breed at least sparingly at this high altitude as conditions are apparently favorable for its existence here.

WILSON'S SNIFE, *Capella delicata*.—One record, a single bird flushed from the edge of a stream in the cut-over area (5,600 feet), March 21, 1932.

NORTHERN BARRED OWL, *Strix varia varia*.—Although fairly plentiful below an altitude of approximately 5,000 feet, only once has this species been recorded in the thick fir and spruce woods at the top of the mountain. On January 4, 1933, one bird was seen in the top of a tree at the edge of a clearing.

CHIMNEY SWIFT, *Chaetura pelagica*.—Observed but once, two feeding overhead over the top of the mountain, May 23, 1930.

RUBY-THROATED HUMMINGBIRD, *Archilochus colubris*.—A female observed June 5, 1930, in open spruce woods at an altitude of approximately 5,000 feet marks the extreme limit to which this species ventures during the breeding season. By the latter part of July fully grown young appear at the edges of the clearings at the top of the mountain and linger there in varying numbers till the middle of September. Extreme dates for their occurrence are July 20 (1932), and September 17 (1931).

NORTHERN FLICKER, *Colaptes auratus luteus*.—Plentiful in early spring and again in the fall in the cut-over area, a few scattered pairs breeding there each year where old snags offer suitable nesting sites. Rarely observed in the fir and spruce woods at the top of the mountain, the only records being single birds seen September 30, 1932, and March 30, 1933.

RED-HEADED WOODPECKER, *Melanerpes erythrocephalus*.—Of casual occurrence here, and only seen at irregular intervals. The one spring record is that of a single bird seen May 8, 1930, in the cut-over area. In the fall it is more numerous and can be found then about clearings at the very top of the mountain. Extreme dates for occurrence are September 3 (1930), and September 30 (1932).

YELLOW-BELLIED SAPSUCKER, *Sphyrapicus varius varius*.—Although fairly plentiful during the summer months below an altitude of approximately 4,600 feet, this

species consistently shuns the higher ridges and has never been found in the fir and spruce woods. Just once, September 30, 1932, was a single bird seen in the cut-over area (6,000 feet).

EASTERN HAIRY WOODPECKER, *Dryobates villosus villosus*.—Nesting sparingly in the cut-over area this species frequently wanders into the fir and spruce woods at the top of the mountain and can be found there throughout the year. A nest was found May 7, 1931, at an altitude of approximately 5,700 feet, that held noisy young, and was thirty feet from the ground in the trunk of an old rotten stub.

NORTHERN DOWNY WOODPECKER, *Dryobates pubescens medianus*.—Of casual occurrence during the summer and fall months both in the cut-over area and in the fir and spruce woods at the top of the mountain. It apparently does not breed on the higher ridges, and until the young are fully grown does not venture far up the mountain-sides. The only record for the spring months is of a male seen March 21, 1930, in the cut-over area (6,000 feet). Extreme dates for occurrence later in the year are July 17 (1933) (6,500 feet), and December 11 (1930) (6,000 feet).

EASTERN PHOEBE, *Sayornis phoebe*.—A common breeding bird in the valleys, but rarely observed above an altitude of approximately 4,000 feet. The two records for the fir and spruce woods at the top of the mountain are single birds seen August 27, 1930, and July 18, 1931, at the edges of clearings.

EASTERN WOOD PEWEE, *Myiochanes virens*.—Of irregular occurrence in the fir and spruce woods at the top of the mountain during the summer months. Single birds were observed there July 31 and August 4, 1931; September 11, 1932; and September 6, 1934.

HORNED LARK, *Otocoris alpestris*.—One record, a flock of possibly twenty birds seen January 24, 1930, flying from the edge of a clearing at the very top of the mountain.

NORTHERN CLIFF SWALLOW, *Petrochelidon albifrons albifrons*.—Of decided interest was the occurrence of this species in August feeding throughout each day high over the top of the mountain. Although to one familiar with swallows feeding low over open fields and pastures these birds seemed rather out of place at an altitude of 7,000 and 8,000 feet, nevertheless they were a characteristic feature of the bird life of Mt. Mitchell at this time of the year. Countless thousands gather each summer at certain spots in the valleys far below, roosting at night in corn-fields and scattering far and wide during the day, so possibly their presence here might be more or less anticipated. Extreme dates at which flocks varying from fifteen or twenty to fully a hundred individuals were seen are August 4 (1931), and September 1 (1932).

NORTHERN BLUE JAY, *Cyanocitta cristata cristata*.—Of casual occurrence during the summer months, appearing in small noisy flocks in the fir and spruce woods at the top of the mountain from early July until October. Not known to breed above an altitude of approximately 4,500 feet.

NORTHERN RAVEN, *Corvus corax principalis*.—One pair at least nests each year on Mt. Mitchell, and one or more of these birds can be seen almost daily throughout the year about the top of the mountain.

BLACK-CAPPED CHICKADEE, *Penthestes atricapillus atricapillus*.—One record, two birds seen May 8, 1930, in the cut-over area (6,000 feet). Once plentiful here, this species has been driven away by the cutting of the spruce woods and at best can be considered of merely accidental occurrence now.

CAROLINA CHICKADEE, *Penthestes carolinensis carolinensis*.—Plentiful in the valleys, but with apparently little liking for the higher altitudes, this species has been recorded but twice at the edge of the cut-over area (5,000 feet). Two birds were seen in the open spruce woods there August 12, 1930, and two March 11, 1931.

TUFTED TITMOUSE, *Baeolophus bicolor*.—Recorded but twice in the fir and spruce woods at the top of the mountain, and largely of accidental occurrence there. A single bird was seen September 30, 1932, and two a week later, on October 7.

RED-BREASTED NUTHATCH, *Sitta canadensis*.—Resident, but varying in abundance according to the amount of spruce and fir seed that has ripened in the fall. When the crop has been good these birds may be found in small flocks throughout the winter in the narrow fringe of woods at the very top of the mountain. On the other hand if there are few cones the birds disappear in October, and while still found at a lower altitude do not return to the top until the following April. So, during the winter of 1929-30 these birds were plentiful on the higher ridges; were completely absent the following winter; were again plentiful during the winter of 1931-32, and scarce the following two winters. They vary little in numbers during the summer months, scattered pairs nesting wherever old stubs offer suitable nesting sites. A nest found June 6, 1930, in spruce woods at the edge of the cut-over area (5,200 feet) held five slightly incubated eggs, and was twenty feet from the ground in an old rotten spruce stub.

BROWN CREEPER, *Certhia familiaris americana*.—Unlike the preceding this species, while it nests in the fir and spruce woods at the top of the mountain, invariably retreats to the valleys in late fall and has never been found above an altitude of approximately 4,500 feet during the winter months. It is the middle of April before it reappears on the higher ridges but scattered pairs can then be seen there throughout the summer. Two birds that nested unusually late were noted August 10, 1931, feeding young as yet barely able to fly. The nest, found close by, was fifteen feet from the ground behind a loose piece of bark on an old rotten fir stub at the side of the road through the fir and spruce woods (6,500 feet).

EASTERN WINTER WREN, *Nannus hiemalis hiemalis*.—Breeding abundantly in the thick fir and spruce woods at the top of the mountain this hardy little bird lingers in the fall until winter blizzards force it to a lower altitude. The first hint of milder weather sees its reappearance, so for ten months out of the average year it can be found on the higher ridges. Exceptional winters will influence its movements to a certain extent, but it can invariably be seen on Mt. Mitchell from the latter part of March until the middle of November, and has been recorded there as early as February 6, 1931, and as late as December 6, 1932. A nest found May 16, 1930, held four fresh eggs, and was well concealed in the upturned roots of a wind-thrown fir in the cut-over area (6,300 feet).

CAROLINA WREN, *Thryothorus ludovicianus ludovicianus*.—Of casual occurrence during the summer months in the fir and spruce woods at the top of the mountain, being recorded there July 30 and August 6, 1930, and July 20 and August 2, 1932.

CATBIRD, *Dumetella carolinensis*.—This species breeds sparingly in the cut-over area to an altitude of approximately 6,000 feet; extreme dates for its occurrence there are May 4, 1933, and September 30, 1930.

BROWN THRASHER, *Toxostoma rufum*.—Of casual occurrence in the cut-over area where it possibly breeds; noted during the summer months to an altitude of approximately 6,200 feet. The earliest date for its arrival in the spring (6,000 feet) is April 30, 1931.

**SOUTHERN ROBIN, *Turdus migratorius achrusterus*.**—A fairly plentiful breeding bird in the fir and spruce woods at the top of the mountain where, to one familiar with this species about the lawns in towns and cities, it seems at first rather out of place. Its arrival in the spring is influenced to a certain extent by the weather, and while it invariably appears by the latter part of March a relatively mild winter, as in 1933–34, has seen its return as early as March 8. It is rarely observed after the last brood of young are fully grown, the one exception being a flock of twenty birds noted October 28, 1932. It is possible that two broods are reared for a nest found June 3, 1930, held three well-incubated eggs, while on August 10, 1931, young barely able to fly were seen being fed by the two adult birds. There are no records for the occurrence of the northern race here, all specimens taken both in the spring and in the fall being clearly referable to *T. m. achrusterus*.

**WOOD THRUSH, *Hylocichla mustelina*.**—One pair of these birds noted June 6, 1930, in the open spruce woods at an altitude of approximately 5,000 feet marks the extreme limit here which this species reaches during the summer months.

**EASTERN HERMIT THRUSH, *Hylocichla guttata faxoni*.**—One record, a single bird seen October 13, 1930, in the cut-over area (6,000 feet).

**OLIVE-BACKED THRUSH, *Hylocichla ustulata swainsoni*.**—A fairly plentiful fall transient both in the cut-over area and in the thick fir and spruce woods. Extreme dates for occurrence then are September 11 (1932) (6,000 feet) and October 7 (1930) (6,500 feet). The only record for the spring migration is of a single bird seen May 11, 1934 (6,500 feet).

**GRAY-CHEEKED THRUSH, *Hylocichla minima aliciae*.**—One record: two birds seen September 21, 1932, in the cut-over area (6,000 feet).

**VEERY, *Hylocichla fuscescens fuscescens*.**—A fairly plentiful breeding bird in the cut-over area to an altitude of approximately 6,000 feet, but of casual occurrence only in the thick fir and spruce woods at the top of the mountain. Extreme dates for its occurrence are April 27 (1934) (5,200 feet) and September 12 (1930) (6,000 feet). A nest found June 6, 1930, held two fresh eggs and was a foot from the ground in brush lying at the edge of a thicket in open spruce woods (5,000 feet).

**EASTERN BLUEBIRD, *Sialia sialis sialis*.**—Fairly plentiful during the early-spring months in the cut-over area (6,000 feet), occurring then in small scattered flocks. Extreme dates of occurrence are February 20 (1931) and March 21 (1930). It may possibly breed sparingly at this altitude, although there are no actual records. It has been seen but once in the fall: two birds flying by overhead over the top of the mountain October 28, 1932.

**EASTERN GOLDEN-CROWNED KINGLET, *Regulus satrapa satrapa*.**—One of the characteristic birds of the spruce and fir woods at the top of the mountain, and observed there throughout the year. It is apparently a remarkably hardy species for despite the severest weather small flocks of these diminutive birds were seen throughout the winter months, varying little in numbers from year to year. By the middle of April mated pairs, the males singing, have been noted, but actual nesting does not take place until early June, and it is July before the first broods of young are seen.

**EASTERN RUBY-CROWNED KINGLET, *Corthylio calendula calendula*.**—A common fall transient both in the cut-over area and in the thick fir and spruce woods at the top of the mountain; extreme dates for occurrence then are September 11 (1932) (6,300 feet) and October 27 (1931) (6,600 feet). Observed but twice in the spring: two birds April 19, 1930 (6,500 feet) and a single bird May 4, 1933 (6,500 feet).

CEDAR WAXWING, *Bombycilla cedrorum*.—It is early June before this species appears in the cut-over area (6,000 feet), and fully a month later before scattered pairs are seen in the fir and spruce woods at the top of the mountain. That it breeds there, at least sparingly, is evidenced by a pair seen August 10, 1931, gathering nesting material at the edge of a small clearing (6,600 feet). The only record for the fall months is a flock of possibly forty of these birds seen October 27, 1931 (6,200 feet).

MOUNTAIN VIREO, *Vireo solitarius alticola*.—A fairly plentiful breeding bird in the fir and spruce woods at the top of the mountain. In the valleys the first spring migrants appear during the latter part of March, but April 12 (1930) is the earliest that this species has been noted in the open spruce woods (5,000 feet), and not until May 4 (1933) has the first venturesome individual been seen at the top of the mountain (6,600 feet). The latest date for occurrence in the fall is September 30 (1930).

RED-EYED VIREO, *Vireo olivaceus*.—One record, two birds seen September 11, 1932, one in the cut-over area (6,000 feet), the other in the thick fir and spruce woods (6,500 feet) feeding with a restless flock of warblers.

BLACK AND WHITE WARBLER, *Mniotilta varia*.—Plentiful during the late summer in the thick fir and spruce woods at the top of the mountain, appearing with un-failing regularity in July and lingering until September. Extreme dates for occurrence then are July 18 (1931) and September 12 (1930). Not known to breed above an altitude of approximately 3,000 feet.

GOLDEN-WINGED WARBLER, *Vermivora chrysoptera*.—One record, a single bird seen September 3, 1930, in the cut-over area (6,000 feet).

TENNESSEE WARBLER, *Vermivora peregrina*.—A plentiful fall transient both in the cut-over area and in the thick fir and spruce woods at the top of the mountain, where small restless flocks are seen throughout all of September. Extreme dates for occurrence are September 1 (1932) (6,500 feet) and October 1 (1931) (6,600 feet).

MAGNOLIA WARBLER, *Dendroica magnolia*.—A fairly plentiful fall transient in the thick fir and spruce woods at the top of the mountain; extreme dates for occurrence then are September 3 (1930) and October 1 (1931) (6,600 feet).

CAPE MAY WARBLER, *Dendroica tigrina*.—A rather scarce transient in the thick fir and spruce woods at the top of the mountain, where it has been noted but four times. The one record for the spring migration is a male seen May 4, 1933, while in the fall it has been recorded September 30, 1932, and September 14 and 15, 1933.

BLACK-THROATED BLUE WARBLER, *Dendroica caerulescens caerulescens*.—Although possibly more plentiful than actual records would indicate, this northern race has but twice been found in the fir and spruce woods at the top of the mountain. Two females taken September 1 and October 7, 1932, are clearly referable to this form.

CAIRNS'S WARBLER, *Dendroica caerulescens cairnsi*.—A plentiful breeding bird in the cut-over area to an altitude of approximately 6,000 feet. During the latter part of July young of the year appear in the fir and spruce woods at the top of the mountain, and this species can be found there then until early October. Its hardiness is evidenced by a female seen October 7, 1932 (6,600 feet) when the temperature registered 19 degrees F., and there was a light snow on the ground. Extreme dates for occurrence are April 26 (1930) and October 13 (1930).

MYRTLE WARBLER, *Dendroica coronata*.—Although an abundant transient in the valleys, this species is rarely found on the mountain-sides, and there are but two



records for its occurrence in the fir and spruce woods at the top of the mountain. Three birds were seen there September 30, 1932, and two October 18, 1933.

**BLACK-THROATED GREEN WARBLER, *Dendroica virens virens*.**—A plentiful breeding bird in the thick fir and spruce woods at the top of the mountain, appearing in April when the ground is frequently still covered with snow and lingering in the fall until early October. Extreme dates for occurrence are April 17 (1931) and October 7 (1930). Two broods may at times be raised for a female was seen gathering nesting material May 23 (1934), and on August 15 (1932) a male was watched as it fed a young bird out of the nest but a day or so and as yet barely able to fly.

**BLACKBURNIAN WARBLER, *Dendroica fusca*.**—Although not known to breed above an altitude of approximately 5,000 feet, this species is fairly plentiful during the late summer in the fir and spruce woods at the top of the mountain, appearing regularly in July and lingering through September. Extreme dates for occurrence then are July 30 (1930) and September 30 (1932).

**CHESTNUT-SIDED WARBLER, *Dendroica pennsylvanica*.**—A plentiful breeding bird in the cut-over area to an altitude of approximately 6,300 feet, and of casual occurrence during the late-summer months in the fir and spruce woods at the top of the mountain. Extreme dates for occurrence are May 2 (1930) and September 18 (1930).

**BAY-BREASTED WARBLER, *Dendroica castanea*.**—A somewhat scarce but regular fall transient in the fir and spruce woods at the top of the mountain. Extreme dates for occurrence then are September 12 (1930) and October 7 (1930).

**NORTHERN PINE WARBLER, *Dendroica pinus pinus*.**—While this species does not breed above an altitude of approximately 2,500 feet, it can be found regularly, though in small numbers, in the fir and spruce woods at the top of the mountain during the late summer. Extreme dates for occurrence then are July 30 (1930) and September 18 (1930).

**NORTHERN PRAIRIE WARBLER, *Dendroica discolor discolor*.**—Noted but twice in the cut-over area; single birds were seen August 6, 1930 (6,000 feet) and September 11, 1932 (6,300 feet).

**WESTERN PALM WARBLER, *Dendroica palmarum palmarum*.**—Likewise noted but twice in the cut-over area (6,200 feet); four birds were seen September 18, 1930, and a single bird September 11, 1932.

**OVEN-BIRD, *Seiurus aurocapillus*.**—A fairly plentiful fall transient in the thick fir and spruce woods at the top of the mountain; extreme dates for occurrence then are September 1 (1932) and October 7 (1930). Not known to breed above an altitude of approximately 4,500 feet.

**MARYLAND YELLOW-THROAT, *Geothlypis trichas trichas*.**—Of casual occurrence during the fall months in the cut-over area; extreme dates for occurrence there are August 20 (1930) (5,000 feet) and September 24 (1931) (6,000 feet).

**NORTHERN YELLOW-THROAT, *Geothlypis trichas brachidactyla*.**—One record, a male taken October 13, 1930, in the cut-over area (6,300 feet).

**YELLOW-BREASTED CHAT, *Icteria virens virens*.**—A singing male noted May 8, 1930, in the cut-over area at an altitude of approximately 5,000 feet marks the extreme limit to which this species ventures during the summer months.

**HOODED WARBLER, *Wilsonia citrina*.**—Of casual occurrence in the cut-over area during the late summer and early fall. Three birds were seen there August 6, 1930 (6,000 feet); a male September 12, 1930 (6,300 feet); and another male September 30, 1932 (6,300 feet). A dead bird, an adult male, was also found on a

trail in the fir and spruce woods at the top of the mountain (6,650 feet) on October 18, 1930.

CANADA WARBLER, *Wilsonia canadensis*.—A plentiful breeding bird in the cut-over area to an altitude of approximately 6,300 feet, appearing early in May and lingering until the first of September. Not known to nest in the fir and spruce woods at the top of the mountain until the year 1934 when two pairs were found there May 23. Extreme dates for occurrence are May 2 (1930) and September 3 (1930).

AMERICAN REDSTART, *Setophaga ruticilla*.—This is another species that ventures to the tops of the higher ridges during the late summer, appearing with unailing regularity in the thick fir and spruce woods (6,500 feet) in August and lingering until early October. Extreme dates for occurrence then are August 16 (1931) and October 7 (1930). Not known to breed above an altitude of approximately 2,300 feet.

EASTERN MEADOWLARK, *Sturnella magna magna*.—Of casual occurrence in the cut-over area to an altitude of approximately 6,200 feet; it was noted there April 2, 1930; May 16, 1930; March 19, 1931; and October 21, 1932.

EASTERN RED-WING, *Agelaius phoeniceus phoeniceus*.—One record, a male seen March 21, 1932, feeding with a flock of Robins in the cut-over area (5,200 feet).

RUSTY BLACKBIRD, *Euphagus carolinus*.—One record, three birds seen November 3, 1930, in the cut-over area (5,400 feet).

ROSE-BREADED GROSBEAK, *Hedymeles ludovicianus*.—Although a plentiful breeding bird on the mountain-sides to an altitude of approximately 4,800 feet, this species is of but casual occurrence during the late summer in the fir and spruce woods (6,500 feet). Extreme dates for the occurrence then of small flocks of fully grown young are August 2 (1932) and August 27 (1930).

INDIGO BUNTING, *Passerina cyanea*.—Appearing with unailing regularity in the fir and spruce woods (6,500 feet) in early July, this species is unique in that throughout the month only adult males are seen, singing each day from the upper branches of the larger trees. At no time have females or young of the year been noted above an altitude of 5,000 feet. Extreme dates for the occurrence of these wandering males at the top of the mountain are July 5 (1931) and July 31 (1934).

EASTERN PURPLE FINCH, *Carpodacus purpureus purpureus*.—One record, a single bird seen January 24, 1930, singing from the upper branches of a tall fir near the top of the mountain (6,500 feet).

NORTHERN PINE SISKIN, *Spinus pinus pinus*.—Plentiful in the fir and spruce woods at the top of the mountain from late January through the latter part of April 1930, but rarely observed since then. That it breeds at least sparingly is evidenced by two birds seen June 4, 1930, and a single bird August 16, 1931, flying by overhead.

EASTERN GOLDFINCH, *Spinus tristis tristis*.—Fairly plentiful during the summer months in the cut-over area to an altitude of approximately 6,200 feet, and of casual occurrence then about clearings in the fir and spruce woods at the top of the mountain. A late nest found September 1, 1932, held four slightly incubated eggs, and was six feet from the ground in a yellow-birch sapling (5,800 feet). It was rather loosely built of shreds of bark and gray plant fibers, lined with fine moss-stems and a few horse-hairs.

RED CROSSBILL, *Loxia curvirostra pusilla*.—Although this species unquestionably breeds here at a lower altitude it has been rarely observed near the top of the mountain. A flock of possibly thirty birds, some of them in streaked juvenal

plumage, seen June 6, 1930 (5,200 feet), a single bird August 27, 1930 (6,200 feet), and two birds September 4, 1931 (5,200 feet), are the only records for this five-year period.

**BENDIRE'S CROSSBILL, *Loxia curvirostra bendirei*.**—One record, two birds, both adult males, found October 21, 1932, in the fir and spruce woods at the top of the mountain (6,500 feet). Their appearance, as they fed in the upper branches of one of the larger trees, at once aroused a suspicion as to their identity, and one that was taken then proved clearly referable to this Rocky Mountain race.

**RED-EYED TOWHEE, *Pipilo erythrophthalmus erythrophthalmus*.**—A fairly plentiful breeding bird in the cut-over area to an altitude of approximately 6,300 feet, extreme dates for occurrence there being April 30 (1931) (6,000 feet) and October 21 (1932) (6,200 feet). It possibly winters sparingly, for a male was seen February 6, 1931, in a spruce thicket in open woods (5,200 feet).

**EASTERN SAVANNAH SPARROW, *Passerculus sandwichensis savanna*.**—One record, a single bird seen October 21, 1932, feeding at the side of an old logging-road in the cut-over area (5,600 feet).

**EASTERN VESPER SPARROW, *Poocetes gramineus gramineus*.**—Of casual occurrence in the cut-over area both in the spring and in the fall. Small flocks noted April 2, 1930 (5,200 feet), April 9, 1931 (5,600 feet), and October 21, 1932 (5,700 feet).

**SLATE-COLORED JUNCO, *Junco hyemalis hyemalis*.**—Fairly plentiful during the late-fall and early-winter months both in the cut-over area and in the fir and spruce woods at the top of the mountain; small flocks linger during mild winters from the latter part of October until January. Earliest date of arrival in the fall, October 28, 1932 (6,000 feet). A small flock seen, and a male taken, January 24, 1930 (6,000 feet).

**CAROLINA JUNCO, *Junco hyemalis carolinensis*.**—This is undoubtedly the commonest and most characteristic bird of the higher ridges in the southern Appalachians. Contrary to general opinion it is practically resident, and while less abundant during the winter months can be found then, despite the most severe weather, in the spruce and fir woods at the top of Mt. Mitchell. On December 23, 1930, the ground there was covered with a foot of snow, the temperature early that morning registered zero, and a blizzard raged throughout the day, yet small flocks of these birds were seen at frequent intervals feeding contentedly in the shelter of fir thickets. Although by the latter part of February or early March males can be heard singing and mating activities are indulged in, it is early May before a serious attempt is made to rear young. Two broods, possibly three, are raised each year; extreme dates at which nests with four, rarely three, fresh eggs have been found are May 16 (1930) (6,500 feet) and August 2 (1932) (6,600 feet). There is the usual irregularity as to the time when individual pairs nest so nests with fresh eggs can be found at almost any time between these two dates. They are invariably well concealed, and are placed in the upturned roots of a wind-thrown tree, in the side of a low bank, or sunken flush with the ground at the edge of a clearing. In construction they vary little, being built of fine twigs, green moss, rootlets and grasses, well cupped and lined with fine grasses and moss-stems. By the latter part of July broods of fully fledged young are numerous, and are usually seen then feeding well off the ground in the outer branches of the larger trees. A careful check on the distribution of this species on May 7, 1931, showed it to be breeding from the very top of the mountain to an altitude of approximately 3,000 feet, but scarce below 4,200 feet.

EASTERN FIELD SPARROW, *Spizella pusilla pusilla*.—Although fairly plentiful during the summer months in the cut-over area to an altitude of approximately 5,200 feet, this species rarely ventures any higher, and only once has been recorded in the fir and spruce woods at the top of the mountain. A single bird was seen at the edge of a clearing there (6,500 feet) on October 27, 1931. Extreme dates for occurrence at 5,200 feet are March 8 (1934) and November 3 (1930).

WHITE-CROWNED SPARROW, *Zonotrichia leucophrys leucophrys*.—Of casual occurrence during the late-fall months in the cut-over area to an altitude of approximately 6,200 feet; extreme dates for occurrence then are October 13 (1930) and November 11 (1930).

WHITE-THROATED SPARROW, *Zonotrichia albicollis*.—Plentiful during the late-fall months in the cut-over area to an altitude of approximately 6,300 feet; extreme dates for the occurrence then of small flocks are October 13 (1930) and November 24 (1930). But two records for the spring migration: a male seen April 24, 1931 (6,200 feet), and a small flock of three birds May 4, 1933 (6,300 feet).

EASTERN FOX SPARROW, *Passerella iliaca iliaca*.—Fairly plentiful during the late-fall months in the cut-over area to an altitude of approximately 6,200 feet, lingering there until the first heavy snowfall. Extreme dates of occurrence then are October 18 (1933) and December 11 (1930). Less plentiful during the spring migration but observed then in small numbers from February 6 (1931) through March 8 (1934).

SWAMP SPARROW, *Melospiza georgiana*.—Two records of single birds seen April 30, 1931, in the fir and spruce woods at the top of the mountain (6,500 feet), and November 6, 1932, in the cut-over area (6,300 feet).

SONG SPARROW, *Melospiza melodia*.—A plentiful breeding bird in the cut-over area, and observed during the summer months to the very edge of the thick fir and spruce woods (6,300 feet). Its appearance in the spring is markedly influenced by the weather, and while a few hardy individuals have been seen in late February it is the latter part of March before this species is present in any numbers. In the fall it lingers through October, and when mild weather prevails has been infrequently recorded in November. Extreme dates for its occurrence are February 25 (1930) and November 3 (1930).

*U. S. Fish and Wildlife Service*  
*Gulfport, Mississippi*